



Norman Wright shows how odometer was installed on wagon wheel that dates from the 1800s.

Odometer's origins traced to Romans — not pioneers

■ **Counting device:** BYU professor writing a history on use in U.S. In the process, he also clears up some myths.

By Brent Harker

How about a game of "Name That Tool?"

Here are the clues:

You use it more often than a hammer.

It played a significant part in the settlement of the United States by Europeans.

You take it with you whenever you travel (by car).

William Clayton did not invent it.

Give up? Why, it's the odometer, of course. It might just be the most widely used tool in the world. And, except when it's time to change the oil or sell the car, we hardly give it a second thought.

Norman Edward Wright, professor of computer science at Brigham Young University, has given it more than a second thought. He's writing a history of the use of odometers in the United States. In the process, he has cleared some of Utah's history.

A common bit of Mormon folklore holds that Clayton, author of the popular hymn, "Come, Come Ye Saints," invented the odometer to mark distances as the Mormons, under the leadership of Brigham Young, migrated from Illinois to Utah in 1847.

According to Wright, the Romans had gear-driven counting devices on their chariots. That's all an odometer is, a gear-driven counting device, even today. In 70 B.C., Vertruvias, a Roman engineer, described an odometer. Leonardo da Vinci designed one that dropped a stone into a box each mile. Germans in the 1400s had odometers.

In 1792, Thomas Jefferson bought a \$10 imported odometer in Philadelphia and measured the distance from there to his home at Monticello. The first odometer patent in the United States was issued in 1818 to James Clark. By 1900, more than 100 odometer-type instruments had passed through the patent process.

They were fine-looking instruments, often fashioned of brass, gear driven, some with faces resembling pocket watches. They were usually just a few inches long and fit inside a container that was attached to a wagon wheel. Activated by the turning of the wheel, the odometer counted each rotation. Multiplying the wheel's circum-

Wright says Clayton had an exacting mind, and, given the lack of a commercially produced odometer, he proposed the building of an odometer of wood. Orson Pratt proposed a design for it, and Appleton Harmon built it.

William A. King later built another odometer of the same design for Mormons traveling east. Clayton kept meticulous records on the trip west and left signs and distances for the nine companies that followed Brigham Young's original group.

A lot of people kept records on their travels west in hopes of making some money, says Wright. They sent maps and distances back east for publication. Clayton's guides sold for \$5 apiece, and later 50 cents each.

Wright says those two Mormon odometers have disappeared. For many years, the Church Museum in Salt Lake City displayed a wooden odometer thought to have belonged to Clayton. Wright proved to the museum, however, that it belonged to Thomas Lowe, whom Brigham Young sent to settle in southern Utah.

Maps in the 1800s were unreliable, says Wright, and the odometers themselves were questionable.

Before the Civil War, explorers and Army topographical engineers were the main users of odometers. Typically, they attached the odometer to a single wheel pulled by a mule. The mule was ridden by the "odometer recorder."

In a journal article, Wright quoted William H. Rideing, a writer from 1877, who described the problems that odometer recorders sometimes encountered:

"To see the odometer on a steep mountain trail is better fun than a circus," Rideing wrote. "As it wobbles along a good road, it excites the curiosity and conjectures of the natives, to whom one wheel without a body is the acme of ludicrous uselessness; but on a precipitous path, strewn with enormous boulders and netted with chaparral, it shows the infinite possibilities of its motions.

"At one moment it bounds from the ground and saws the air; then it swings over the rider's head and assumes the appearance of a patent hair brushing machine of unusual proportions; and in extreme instances reverses its normal motions entirely, and is propelled by the mule instead of dragging at that capricious creature's pendulatory tail."

Despite its shortcomings, the odometer was an essential part of the surveys that led to the building of railroads and the colonization of the West. When John C. Fremont made a survey for the transcontinental railroad, he used an odometer. When Howard Stansbury surveyed the Great Salt Lake in 1849, the odometer was there. John W. Gunnison used an odometer while mapping Utah Lake.

When Stansbury left Utah in 1850, he sold several instruments. Wright believes the fine brass odometer in



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